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## **2006 MARTEN AND FISHER HARVEST SURVEY**

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### **ABSTRACT**

*A survey was completed to determine the number of harvest tag holders who set traps for marten and fisher, the number of animals caught, the types of traps used, and the number of days trapped. In 2006, 1,530 furtakers obtained a harvest tag to trap marten or fisher. About 32% of the tag holders set traps for marten (483 trappers) and 40% set traps for fisher (608). The estimated 483 trappers spent nearly 4,921 days trapping marten ( $\bar{x}$  = 10 days/trapper), captured 254 marten (included animals released alive), and registered 211 marten (included incidentally caught animals). About 42% of marten trappers captured at least one marten. Compared to 2005, the number of furtakers trapping marten increased 58%, the days of effort increased 80%, the number of marten registered increased 30%, the days of effort per registered marten increased 38%, but the number of marten captured was unchanged. An estimated 608 fisher trappers spent nearly 6,759 days trapping fisher ( $\bar{x}$  = 11 days/trapper), captured 554 fisher (included animals released alive), and registered 462 fisher (included incidentally caught animals). About 49% of fisher trappers captured at least one fisher.*

### **INTRODUCTION**

The Natural Resources Commission and Department of Natural Resources (DNR) have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are a management tool used to help accomplish this statutory responsibility. The main objectives of this harvest survey were to determine the number of trappers who set traps for marten (*Martes americana*) and fisher (*M. pennanti*), the types of traps used, the number of days trapped, and the number of animals captured.



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Efforts to restore the American marten and fisher have been successful throughout the Upper Peninsula (UP) (Williams et al. 2007). As a result, the first modern fisher trapping season was initiated in 1989, and the first modern marten trapping season was initiated in 2000.

In 2006, the marten and fisher trapping season was 15 days in the UP (December 1-15). The entire UP, except Drummond Island and the Pictured Rocks National Lakeshore, was open to marten and fisher trapping. In order to trap either marten or fisher, trappers were required to obtain a free harvest tag, in addition to a Fur Harvester License. Trappers were limited to one marten and three fisher, except no more than one fisher could be taken in Management Unit B (Figure 1). Successful trappers were required to register all fisher and marten taken by December 20, 2006. Trappers were not allowed to keep incidental marten and fisher that were caught. However, trappers were required to bring these incidental catches to a registration station if they could not be released alive. Trappers could use body-gripping (conibear type) traps and foothold traps to capture marten and fisher. Live traps were also legal if set within 150 yards of a residence or farm building.

## **METHODS**

A questionnaire was sent to everyone who obtained either a marten or fisher harvest tag in 2006 (1,530 harvest tag holders). Trappers receiving the questionnaire were asked to report if they trapped marten or fisher, number of days spent afield, number of marten and fisher caught and released alive, and number of marten and fisher registered (registration estimates included incidentally caught animals that were not returned to the trapper). Trappers were also asked to indicate their impression of the status of the marten and fisher populations in the county where they primarily trapped (i.e., absent, stable, increasing, or decreasing).

Although all harvest tag holders were sent a questionnaire, not everybody returned their questionnaire. To extrapolate from the tag holders that returned their questionnaire to all people obtaining harvest tags, estimates were calculated using a simple random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). This confidence limit can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or nonresponse bias.

Statistical tests are used routinely to determine the likelihood the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003). The 2006 estimate of marten and fisher registered included incidental animals that the trapper was not allowed to keep.

Questionnaires were mailed initially during mid-January 2007, and up to two follow-up questionnaires were mailed to nonrespondents. Questionnaires were undeliverable to 59 harvest tag holders. Questionnaires were returned by 1,119 of 1,498 people receiving the questionnaire (75% response rate).

## RESULTS AND DISCUSSION

### Marten

In 2006, 1,530 trappers obtained harvest tags to trap either marten or fisher. Marten harvest tags were obtained by 1,455 trappers, and fisher harvest tags were obtained by 1,493 trappers. Men obtained most of the marten and fisher harvest tags (1,442). Women obtained 83 harvest tags, and the sex of five tag holders was unknown. About 32% of the marten and fisher tag holders set traps for marten (483 trappers, Table 1). Trappers spent 4,921 days trapping ( $\bar{x} = 10.2 \pm 0.4$  days/trapper), captured 254 marten, and registered 211 marten (Table 2). About  $42 \pm 3\%$  of trappers successfully captured at least one marten. The greatest numbers of marten were captured in Marquette (40), Baraga (33), and Chippewa (30) counties.

Compared to 2005, the number of people trapping marten increased 58% (483 versus 305 trappers), and trapping effort increased 80% (4,921 versus 2,739 days) (Figure 2). The number of marten captured did not change significantly between 2005 and 2006 (254 versus 249 marten; included animals released alive). However, the number of marten registered increased 30% between 2005 and 2006 (211 versus 162 marten). The mean number of days of effort per registered marten was  $23.4 \pm 2.0$  days in 2006 which increased 38% from 2005 (Figure 3).

Most trappers used conibear-type traps to capture marten ( $86 \pm 2\%$ ), although foothold traps also were used frequently ( $37 \pm 3\%$ ). Among trappers using conibear traps, the mean number of conibear traps set was  $6.9 \pm 0.6$  traps. Among trappers using foothold traps, the mean number of foothold traps set was  $6.3 \pm 0.9$  traps.

Twenty-one percent of marten trappers ( $\pm 2\%$ ) believed marten numbers were increasing in the county where they trapped most often, while  $56 \pm 3\%$  thought marten numbers were stable,  $10 \pm 2\%$  thought marten were declining,  $7 \pm 1\%$  indicated marten were not present, and  $6 \pm 1\%$  did not comment on the status of marten.

### Fisher

About 40% of the marten and fisher tag holders set traps for fisher (608 trappers, Table 1). Trappers spent 6,759 days trapping ( $11.1 \pm 0.3$  days/trapper), captured 554 fisher, and registered 462 fisher (Table 3). About  $49 \pm 2\%$  of trappers successfully captured at least one fisher. The greatest number of fisher were captured in Iron (104), Gogebic (90), Ontonagon (63) and Houghton (57) counties (Table 3).

Most trappers used conibear-type traps to capture fisher ( $80 \pm 2\%$ ), although foothold traps also were used frequently ( $47 \pm 2\%$ ). Among trappers using conibear traps, the mean number of conibear traps set was  $7.5 \pm 0.4$  traps. Among trappers using foothold traps, the mean number of foothold traps set was  $5.6 \pm 0.4$  traps.

Twenty-two percent of fisher trappers ( $\pm 2\%$ ) believed fisher numbers were increasing in the county where they trapped most often, while  $51 \pm 2\%$  thought fisher numbers were stable,

20 ± 2% thought they were declining, 3 ± 1% indicated fisher were absent, and 3 ± 1% did not comment on the status of fisher.

Among trappers that set traps for fisher, 4 ± 1% caught marten in their fisher sets. These trappers caught 29 ± 7 marten.

## **ACKNOWLEDGEMENTS**

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Williams, B. W., J. H. Gilbert, and P. A. Zollner. 2007. Historical perspective on the reintroduction of the fisher and American marten in Wisconsin and Michigan. United States Department of Agriculture, Forest Service, General Technical Report NRS-5, Newton Square, Pennsylvania, USA.

Table 1. Estimated harvest tag holders that attempted to trap marten or fisher in Michigan during 2006 season.

Harvest tag holders	%	95% CL <sup>a</sup>	Total	95% CL <sup>a</sup>
Trapped only marten	6	1	88	11
Trapped only fisher	14	1	213	16
Trapped both marten and fisher	26	1	395	20
Trapped either marten or fisher	45	2	696	23
Trapped marten (includes some people that did not trap fisher)	32	1	483	22
Trapped fisher (includes some people that did not trap marten)	40	1	608	23

<sup>a</sup>95% confidence limits.

Table 2. Estimated number of trappers, trapping effort, marten captured (including all incidental catches and releases), marten released alive, and marten registered (including incidental catches) during the 2006 Michigan trapping season.

County	Trappers		Trapping effort (days)		Marten captured <sup>a</sup>		Marten released alive		Marten registered <sup>b</sup>	
	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>
Alger	48	8	427	78	27	7	1	1	26	6
Baraga	60	9	436	72	33	8	4	2	29	7
Chippewa	56	9	461	84	30	8	3	3	27	7
Delta	14	4	138	49	3	3	1	1	1	1
Dickinson	11	4	62	26	0	0	0	0	0	0
Gogebic	51	8	558	98	21	6	4	2	16	5
Houghton	29	6	243	58	10	5	3	3	7	3
Iron	66	9	719	111	26	7	1	1	25	6
Keweenaw	15	5	146	47	12	5	3	2	10	4
Luce	60	9	454	79	29	7	5	4	23	6
Mackinac	15	5	120	43	5	3	1	1	4	2
Marquette	68	10	582	93	40	11	11	5	29	7
Menominee	7	3	75	36	0	0	0	0	0	0
Ontonagon	30	6	298	68	14	7	4	3	10	4
Schoolcraft	22	6	201	58	5	3	1	1	4	2
Unknown	0	0	0	0	0	0	0	0	0	0
Statewide <sup>d</sup>	483	22	4,921	280	254	22	44	10	211	17

<sup>a</sup>All marten removed from traps, including all incidental catches and releases.

<sup>b</sup>Includes incidentally caught marten that were not returned to the trapper.

<sup>c</sup>95% confidence limits.

<sup>d</sup>Number of trappers does not add up to statewide total because trappers could trap in more than one county. Column totals for trapping effort and capture may not equal statewide totals because of rounding errors.

Table 3. Estimated number of trappers, trapping effort, fisher captured (including all incidental catches and releases), fisher released alive, and fisher registered (including incidental catches) by trappers during the 2006 Michigan trapping season.

County	Trappers		Trapping effort (days)		Fisher captured <sup>a</sup>		Fisher released alive		Fisher registered <sup>b</sup>	
	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>	Total	95% CL <sup>c</sup>
Alger	41	8	384	76	19	5	1	1	18	5
Baraga	56	9	476	80	31	9	4	3	27	8
Chippewa	46	8	431	83	5	3	0	0	5	3
Delta	19	5	220	64	4	2	0	0	4	2
Dickinson	30	6	283	72	19	7	0	0	19	7
Gogebic	67	10	742	112	90	23	30	12	60	13
Houghton	53	9	518	89	57	14	5	4	52	12
Iron	103	12	1,112	137	104	17	5	3	98	17
Keweenaw	22	6	263	69	29	11	10	8	19	5
Luce	46	8	308	58	18	6	5	3	12	4
Mackinac	16	5	145	47	7	4	1	1	5	3
Marquette	74	10	685	105	52	15	11	8	41	11
Menominee	31	7	280	64	14	4	1	1	12	4
Ontonagon	57	9	552	91	63	16	12	7	51	12
Schoolcraft	40	7	346	72	40	9	4	2	36	9
Unknown	5	3	14	14	1	1	0	0	1	1
Statewide <sup>d</sup>	608	23	6,759	323	554	44	92	20	462	33

<sup>a</sup>All fisher removed from traps, including all incidental catches and releases.

<sup>b</sup>Includes incidentally caught fisher that were not returned to the trapper.

<sup>c</sup>95% confidence limits.

<sup>d</sup>Number of trappers does not add up to statewide total because trappers could trap in more than one county. Column totals for trapping effort and capture may not equal statewide totals because of rounding errors.

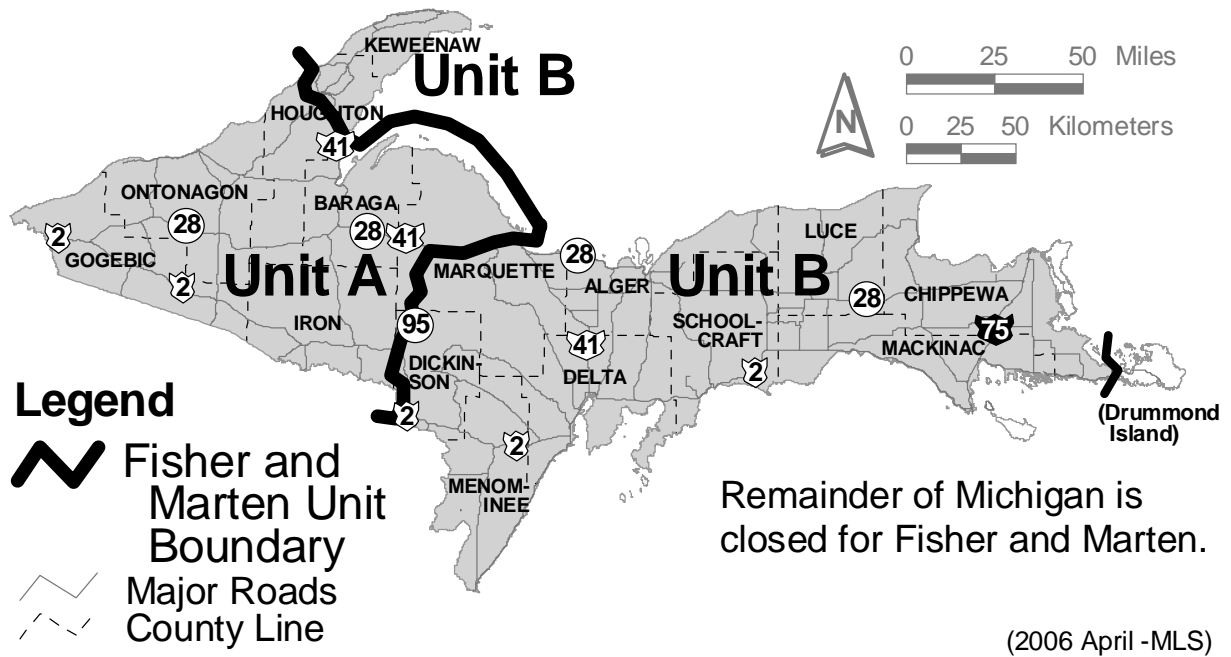


Figure 1. Marten and fisher management units in Michigan, 2006.

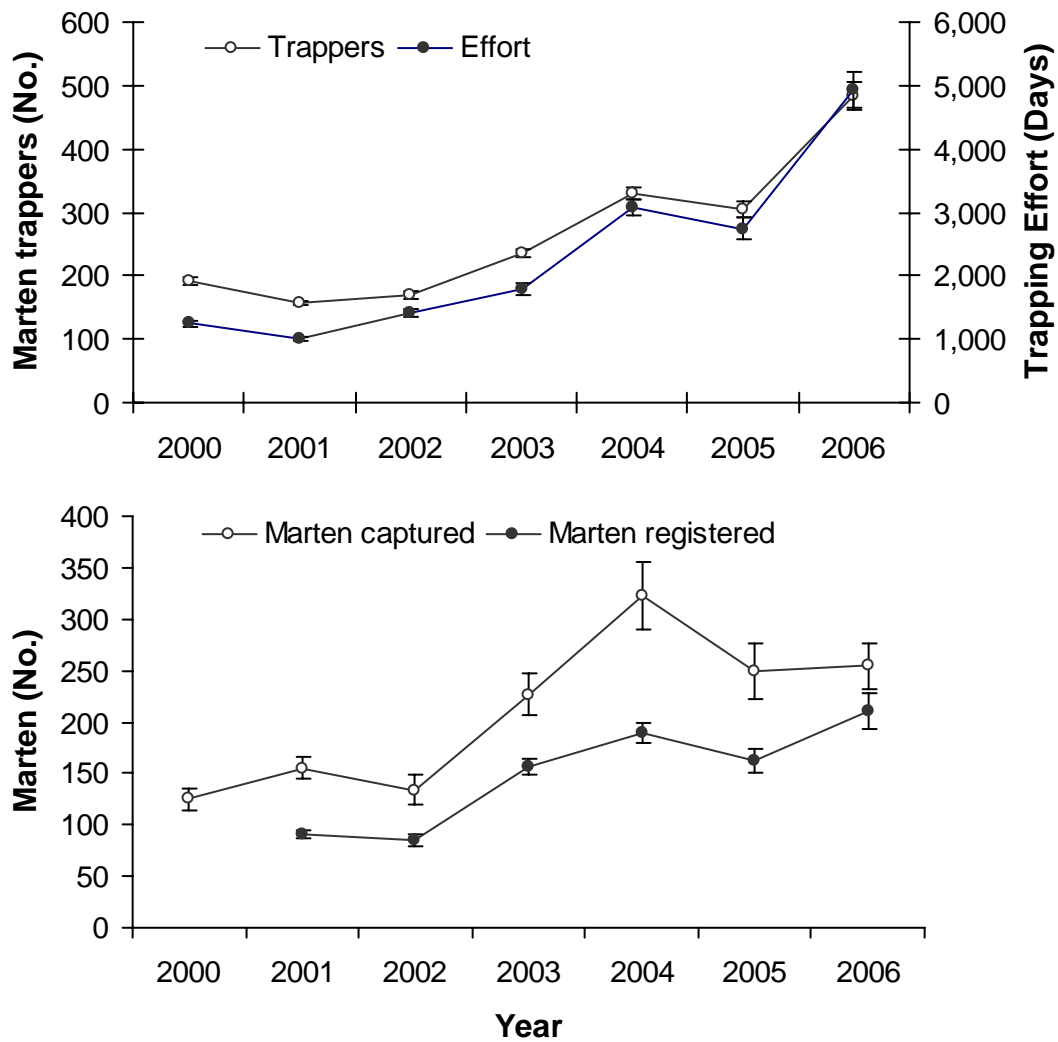


Figure 2. Estimated number of trappers, trapping effort (days), and number of marten captured and registered in Michigan, 2000-2006. Registration total was not estimated in 2000. Beginning in 2005, the estimate of marten registered included incidental animals that the trapper was not allowed to keep; estimates from previous years excluded incidental animals.



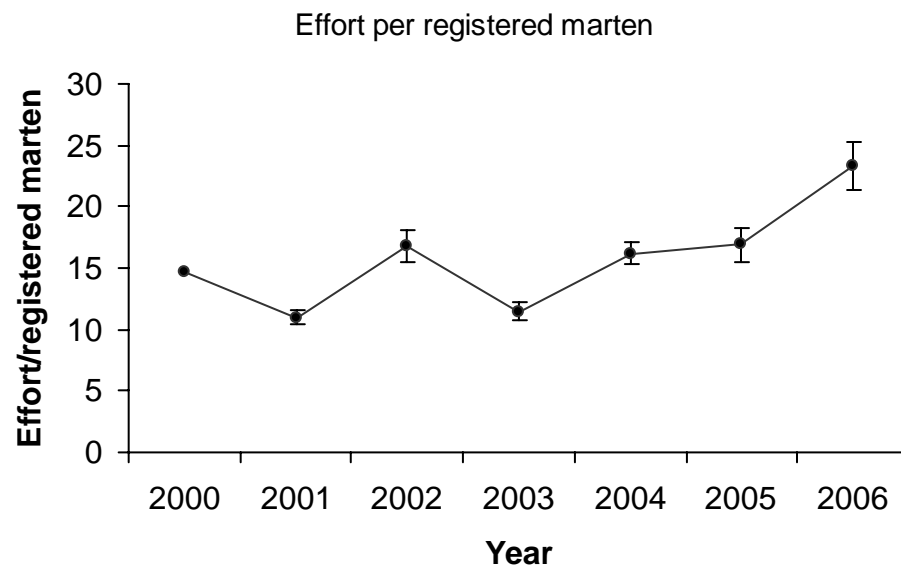


Figure 3. Estimated mean number of days required to harvest a marten in Michigan during 2000-2006. Vertical bars represent the 95% confidence interval.